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Illinois--Natural history survey.

Research for food production and food protection.

STATE OF ILLINOIS
Dwight H. Green, Governor

RESEARCH



for

Food Production Food Protection

NATURAL HISTORY SURVEY
Leo R. Tehon, Acting Chief

A Division of the
DEPARTMENT OF REGISTRATION AND EDUCATION
Frank G. Thompson, Director

FOOD AND THE NATURAL HISTORY SURVEY

In a time of hunger in the world, men turn their minds more than usual toward food. They try to produce larger quantities of it. They hunt for new and improved ways of protecting growing food plants and food animals from diseases and insect pests. They seek new ways of preserving food products from damage by insects.



The Natural Resources Building, at the south end of the University of Illinois campus, Urbana, houses the offices and main laboratories of the Illinois Natural History Survey.

But efforts to produce and protect food are apt to be wasted unless they are founded on adequate knowledge. In the complicated modern world of insect pests and plant diseases, such knowledge is the result mainly of sound research.

The Illinois Natural History Survey was established to conduct the type of research now much needed in the production and protection of food. Although its field of investigation covers all the renewable natural resources of the state—all the living plant and animal life—most of its research efforts are pointed toward resources close to such basic human needs as food and shelter.

In offices and laboratories located in the new and well-equipped Natural Resources Building (on the University of Illinois campus) in Urbana, and in other laboratories located at strategic points in the state, the Natural History Survey carries on investigations of fish, forests, and wildlife, and of insects that affect man directly or indirectly.

The staff of the Natural History Survey is made up of thoroughly trained and experienced scientists who are assigned to specific duties. Some are concerned with control of insect pests, others with plant diseases, or with fish, forestry, or wildlife.



In the experimental greenhouse, studies of insect pests and plant diseases are carried on throughout the year.

Leading the Fight for Insect Control. For three quarters of a century, the Natural History Survey and the two parent organizations from which it was formed in 1917 have been leading the fight against insect pests of Illinois.

Insects of field, pasture, orchard, garden, truck farm, greenhouse, woodlot, household, granary, and barn have long been subjects of study. The newest insecticides applied by the newest methods,



Experimental work for control of the European corn borer by cultural methods and by modern insecticides is an important part of the Natural History Survey program. Dusting of a sweet corn field is pictured here.

including the airplane, are now being tested in the field as well as in the laboratory.

For 15 years before the European corn borer was found in the state, the Natural History Survey had sent entomologists into Ohio and other infested areas to study the habits of this dreaded insect.



Natural History Survey entomologists are constantly searching for new and better ways to control orchard insects.

By the time the borer entered Illinois, farmers of the state had been given detailed instructions for keeping down its numbers. Such cultural practices as clean plowing, delayed planting, and use of suitable hybrids, have done much thus far to prevent the insect from reaching the damaging numbers found in many eastern states.

Throughout the year, Natural History Survey entomologists study the abundance of such insects as the chinch bug, hessian fly, corn borer, oriental fruit moth, and codling moth, watch their development, and issue warnings through radio and press that will enable farmers and fruit growers to fight these insects effectively. They cooperate with federal and other state agencies, and the University of Illinois, in developing insect control measures.

The Natural History Survey maintains one of the largest collections in the United States of insects important to farmers and fruit growers. Specially trained entomologists are employed to maintain this collection and to name insects sent for identification.

On the Alert for Plant Diseases. Although damage to grain and forage plants by diseases is usually less spectacular than that by insects, plant disease damage in Illinois represents a financial loss that is annually greater than commonly suspected.

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Phytophthora crown rot, frequently found affecting sweet clover plants along Illinois roadsides, is sometimes destructive in sweet clover fields. Natural History Survey botanists are constantly on the lookout for plant diseases and for ways of controlling them.



Through periodic field inspections and reports, Natural History Survey botanists detect and give warning of the prevalence of diseases of corn, small grains, potatoes, fruits, legumes, and other food plants. They are doing outstanding research with shade trees, ornamentals, and other plants closely related to human living. They are constantly on the lookout for new diseases, and are able to offer suggestions for controlling or avoiding diseases long established in the state. Each year they identify the diseases of many plants submitted to them by Illinois citizens.



Natural History Survey botanists recommend seed treatment to control certain grain diseases. An oil-drum mixer, like that shown here, is inexpensive and is effective against many seed-borne diseases.



Natural History Survey field laboratory bordering the Chautauqua National Wildlife Refuge near Havana. At right, in Quiver Creek, is the Anax, the Survey's laboratory boat, used in fisheries investigations on the Illinois River and other navigable waters.

A Few NATURAL HISTORY SURVEY Publications

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| <input type="checkbox"/> Diseases of Small Grain Crops | <input type="checkbox"/> Management of Small Artificial Lakes |
| <input type="checkbox"/> Controlling Peach Insects | <input type="checkbox"/> Overfishing in a Small Artificial Lake |
| <input type="checkbox"/> Control of Roundheaded Apple Tree Borer | <input type="checkbox"/> Fertilizers in Fish Pond Management |
| <input type="checkbox"/> Windbreaks for Illinois Farmsteads | <input type="checkbox"/> Lake Management Reports: Lincoln Lake |
| <input type="checkbox"/> Pleasure with Plants | <input type="checkbox"/> Lake Management Reports: Fork Lake |
| <input type="checkbox"/> How to Collect and Preserve Insects | <input type="checkbox"/> Advances in the Renewable Natural Resources Program in Illinois |
| <input type="checkbox"/> Prairie Chicken in Illinois | <input type="checkbox"/> The Conservation Research Program in Illinois |
| <input type="checkbox"/> Survey of Illinois Fur Resources | <input type="checkbox"/> A Report of the Natural History Survey |
| <input type="checkbox"/> Fox and Gray Squirrels in Illinois | <input type="checkbox"/> List of Publications |
| <input type="checkbox"/> Waterfowl Hunting in Illinois | |
| <input type="checkbox"/> Duck Food Plants of the Illinois River | |
| <input type="checkbox"/> Duck Populations and Kill | |
| <input type="checkbox"/> Planning Artificial Lakes | |

Illinois Natural History Survey, Natural Resources Building, Urbana, Illinois

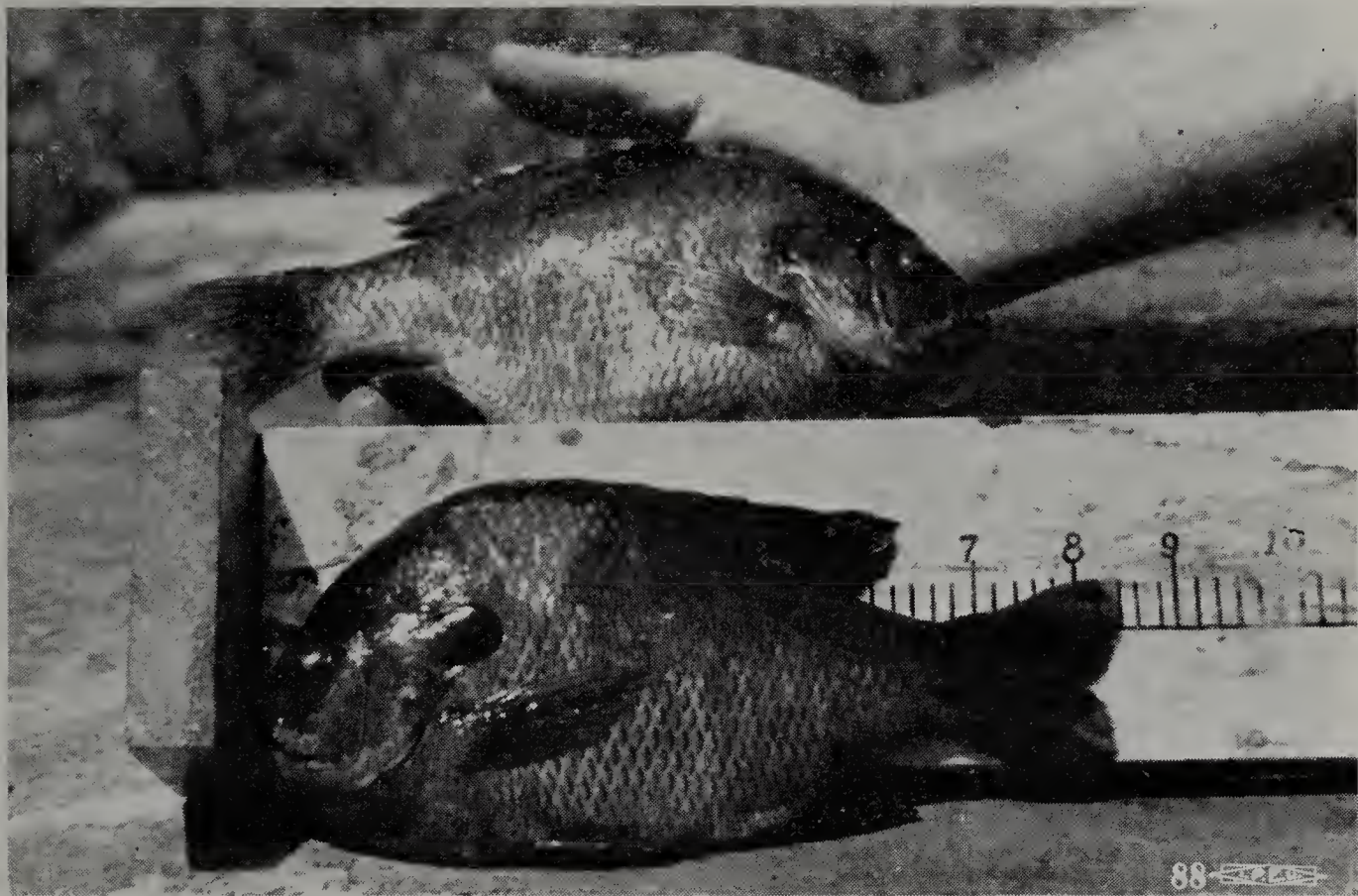
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Fish for Commerce and Sport. Research by Natural History Survey fish experts has shown that small artificial lakes of the state are capable of producing large crops of fish of attractive sizes. Under-fishing, rather than overfishing, has been pointed out as the cause of "poor" fishing in most lakes.

Studies are being made to determine the best combinations of fish species for artificial ponds and to discover the effect of fertilizing ponds under Illinois conditions.



Bluegills from a farm pond in Adams County. These fish averaged one-tenth pound when stocked in June, 1939, and nearly three-fourths pound when recaptured 13 months later. By 1941, the population of this pond was badly stunted because of over-population. Fish in ponds and calves in pastures must have plenty of room and food if satisfactory growth rates are to be maintained.

Small ponds that furnish good fishing and good food are found on many Illinois farms. Others are being planned. Natural History Survey fish experts, who have studied such ponds, willingly furnish suggestions for the stocking and management of these and other small bodies of water.

In cooperation with fish experts of four neighboring states, the Illinois Natural History Survey is conducting a study of the upper Mississippi River that should result in increased production of commercial fish from this waterway.

Food From Marshes and Fields. Migratory waterfowl and upland game have long furnished an important supplement to Illinois tables. The Natural History Survey studies food and cover needs of these wildlife forms and closely watches the rise and fall of populations. The studies form the basis for management recommen-



dations designed to prevent serious depletion of desirable species. Working with foresters, Natural History Survey game technicians have developed a field border, principally of oriental rose and Morrow's honeysuckle, that gives shelter to game birds, song birds, and rabbits without occupying as much land as the Osage orange hedge-row. This border is suitable also for ditchbank planting.



A hedge of oriental rose and Morrow's honeysuckle (left) furnishes cover for upland birds, rabbits, and song birds. A pastured ditchbank (below, left) furnishes little cover for wildlife and erodes rapidly. A planted ditchbank fenced from cattle (below, right) yields good wildlife returns, especially from muskrats, valuable for both fur and food.



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